

**Office of the President
California State University, Chico**



Executive Memorandum 19-029

October 24, 2019

From: Gayle E. Hutchinson, President

Subject: Approval to elevate the Option in Crops, Horticulture, and Land Resource Management within the BS in Agriculture to the BS in Plant and Soil Science

Upon the recommendation of the Academic Senate, with the concurrence of the Provost, and with the approval of the Chancellor's Office, I approve the elevation of the Option in Crops, Horticulture, and Land Resource Management within the BS in Agriculture. The option will be discontinued and will become the Bachelor of Science in Plant and Soil Science with two options: Crops and Horticulture, and Land and Soil Resource Management. The new degree has been assigned CSU Degree Code 01021 with a paired CIP code of 01.1102. These changes will be effective fall 2020.

Policy Title:	EM 19-029 Elevation of the Option in Crops, Horticulture, and Land Resource Management to the BS in Plant and Soil Science
Contact:	College of Agriculture
Supersedes:	
Revision:	
Enabling Legislation or Executive Order:	

Elevate Undergraduate Option to Degree

Option Name: Crops, Horticulture, and Land Resource Mgt.

Within: Agriculture
(Degree program name)

Proposed New Degree: Plant and Soil Science

Will new degree be matched with Transfer Model Curriculum? Yes No

Will proposed changes affect a subject matter preparation or credential program? Yes No
EM 07-012

Brief rationale for elevation:

This elevation is in response to years of student, stakeholder, faculty, & admin. requests for clarification of the CHLR program. We have long maintained two areas of study within the option that are not separable in the Degree Progress Report, making advising and course choice confusing for faculty and students. The current Option name does not provide a clear idea to stakeholders (employers) or students of what courses or program has been completed. We currently do not accept the TMC in this option and we are out of compliance with EO 1071. Elevating this option to a stand-alone degree addresses all of the above concerns and will allow us to accept the TMC for the associated options (formerly AOSs) in the proposed PSSC degree.

Required Signatures

The Department of N/A has reviewed and approved this elevation proposal

[Signature]
Chair, Department Curriculum Committee

4/20/18
Date

[Signature]
Department Chair

4/23/18
Date

The College of Agriculture has reviewed and approved this elevation proposal

[Signature]
Chair, College Curriculum Committee

4/20/18
Date

[Signature]
College Dean

5/8/18
Date

Send signature page with proposal attached to Curriculum Services: SSC 464B, zip 128

Curriculum Review Completed

9/21/18 [Signature]
Date

Note: The department will be notified of the of dates for EPPC, Academic Senate, and Chancellor's Office review.

Proposal to elevate the Crops, Horticulture, and Land Resource Management (CHLR) option in the B.S. in Agriculture to a stand-alone B.S. in Plant and Soil Science degree

September 2017

Elevating Options or Concentrations to a Full Degree Program Template

Please Note:

- Campuses may mention proposed new degree programs (including option elevations to full programs) in recruitment material if it is specified that enrollment in the proposed program is contingent on authorization from the CSU Chancellor's Office.
 - All approved degree programs, including concentrations, options and special emphases, will be subject to campus program review within five years after implementation. Program review should follow system and Board of Trustee guidelines (including engaging outside evaluators) and should not rely solely on accreditation review.
 - Use this template only if the campus is proposing an elevation of an option, concentration, or area of emphasis to a full stand-alone degree program (see elevation policy dated 11/1/16 for guidance).
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1. Program Type (Please specify any from the list below that apply—delete the others)

- a. State-Support
Yes
- b. Self-Support (also complete #6 below)
No
- c. Option Elevation
Yes

2. Program Identification

- a. Campus
CSU, Chico
- b. Full and exact degree designation and title (e.g., Master of Science in Genetic Counseling, Bachelor of Arts with a Major in History).
Bachelor of Science in Plant and Soil Science
- c. Term and academic year of intended implementation (e.g., fall 2019).
Fall 2019
- d. Total number of units required for graduation. This will include all requirements (and campus-specific graduation requirements), not just major requirements.
120
- e. Name of the department(s), division, or other unit of the campus that would offer the proposed degree major program. Please identify the unit that will have primary responsibility.
College of Agriculture, Plant and Soil Science Program Area

- f. Name, title, and rank of the individual(s) primarily responsible for drafting the proposed option or concentration elevation to a full degree major program.

Elizabeth Boyd, PhD, Entomologist & Weed Scientist, Associate Professor (proposal lead author)

Rich Rosecrance, PhD, Pomologist & Horticulturist, Full Professor

Lee Altier, PhD, Olericulturist & Horticulturist, Full Professor

Garrett Liles, PhD, Soil Scientist, Assistant Professor

Hossein Zakeri, PhD, Agronomist & Crop Physiologist, Assistant Professor

- g. Please specify whether this proposed program is subject to [WASC Substantive Change](#) review. The campus may submit a copy of the WASC Sub-Change proposal in lieu of this CSU proposal format. If campuses choose to submit the WASC Substantive Change Proposal, they will also be required to submit a program assessment plan using the format found in the CSU program proposal template.

This program is not subject to WASC Substantive Change review.

- h. Optional: Proposed Classification of Instructional Programs and CSU Degree Program Code

Campuses are invited to suggest one CSU degree program code and one corresponding CIP code. If an appropriate CSU code does not appear on the system-wide list at: <http://www.calstate.edu/app/resources.shtml>, you can search CIP 2010 at <http://nces.ed.gov/ipeds/cipcode/Default.aspx?y=55> to identify the code that best matches the proposed degree program. The Classification of Instructional Programs (CIP) is a National Center for Education Statistics (NCES) publication that provides a numerical classification and standard terminology for secondary and postsecondary instructional programs. The CSU degree program code (based on old HEGIS codes) and CIP code will be assigned when the program is approved by the Chancellor.

We suggest CIP Code 01.1101: Plant Sciences, General.

Other related, and potentially acceptable, CSU Degree Program and CIP Codes include 01021 Agronomy, Crop Science 01.1102 and 0991 Agricultural Biology, Plant Science 01.1105.

- i. Please provide teach-out policy language to accommodate those students who will complete the original program with the option.

There is no “teach-out policy language” here at CSU, Chico. However, students who opt to maintain existing catalog rights rather than migrate to the new major, will complete their programs as currently scheduled. Courses required for existing programs will not be deleted or discontinued. There are no changes in the program that would negatively impact a student completing the current CHLR option in the Agriculture degree.

- j. Provide evidence the current option will be discontinued once all existing students exit the program.

If this proposal is approved, the option will move (elevate) from the existing degree to its own stand-alone major and the CHLR option will be discontinued. Please see attached Discontinuation proposal, Catalog Copy for the stand-alone major, and Side-by-Side comparisons.

3. Program Overview and Rationale

- a. Provide a rationale for option elevation to a full degree program. Include a brief description of the program, its purpose and strengths, fit with institutional mission, and a justification for elevating the option to a full degree program at this time.

Description of the Program, Purpose, & Strengths

The College of Agriculture at CSU, Chico currently offers three degree programs (Agriculture, Agricultural Business, and Animal Science). Within the degree in Agriculture, there are two distinct options:

- Crops, Horticulture, and Land Resource Management (CHLR)
- Agricultural Science and Education (ASE).

The CHLR option contains two areas of study (Crops & Horticulture and Land Resource Management) which prepare students to work in crop production, plant health, and natural resource industries. Students in the ASE option typically focus on becoming high school agriculture teachers. These two options share common integrated and multidisciplinary lower and upper division core (a hallmark and cherished component of all degrees offered in the College of Agriculture), but vary considerably in the option course requirements. ***The disparate academic foci of the programs necessitates that more than 50% of the major units are delineated into the separate CHLR and ASE options. These differences make it impossible to maintain distinctive programs and comply with the new EO 1071 requirements.*** Furthermore, the current two-option model has created confusion and subsequent challenges for timely degree completion.

We propose to elevate the existing CHLR option to a Bachelor of Science in Plant and Soil Science with two options, Crops & Horticulture and Land Resource Management (currently areas of study in the existing option). Without decreasing our integration and multidisciplinary nature, this proposed change will allow both options of the current Agriculture degree to maintain program priorities, increase visibility of the areas of study, and comply with EO 1071.

Currently, there are four colleges of agriculture in the 23 CSU campus system that offer comparable degrees in plant science (Pomona & Fresno – Plant Science; San Luis Obispo – Horticulture and Crop Science; Chico – Agriculture). Of these, ***CSU, Chico offers the only program with plant and soil science curriculum embedded in a degree shared with agriculture education.*** The current degree model does not provide students in our service area with a degree representative of the academic preparation they have earned. Our proposed degree changes alleviate these issues and provide the platform for a forward-looking program with potential to meet future demand in areas such as plant breeding, seed production, postharvest management, and food safety.

Justification for elevating the option to a full degree program

The CHLR option in the Agriculture degree at CSU, Chico has experienced rapid enrollment growth. ***Enrollment in the option has increased from 38 undergraduates in spring 2008 to 149 in spring 2018 (292%)*** (Source: Institutional Research via Insight Reporting; see Table 1 below). Although the option in CHLR has grown considerably, the program has not been able to recruit students effectively, because the skillset offered in the option lacks visibility to students and stakeholders. As a result we rely heavily on word-of-mouth publicity. The current Agriculture degree name and option do not intuitively infer the skills gained in our program that are comparable to other plant science degrees. This has been a common complaint shared by students and industry stakeholders. The new elevated degree will provide a more visible coursework path for students, therefore decreasing potential for confusion and increasing four year graduation rates. It also provides distinctive degree and option names that provide transparency of skillset for future employment. Furthermore, the proposed degree name would align with the current program area Course Subject Abbreviation, PSSC.

Plant and soil science and its allied industries are rapidly expanding across the diverse agricultural landscape of California. California is the number one agricultural economy in the US (see: <https://data.ers.usda.gov/reports.aspx?ID=17844>) and its top 20 crop commodities accounted for more than \$23 billion of the \$35.5 billion agriculture industry in 2015 (www.cdfa.ca.gov). This industry is evolving with increasing opportunities for students with scientific training in crop production, soil and plant health, water conservation, and food safety. An April 5th, 2018 search of www.agcareers.com (the leading online job listing service for agriculture, food, and biotechnology) using the grouped words “plant soil” in California yielded 304 employer jobs and 61 recruiter jobs. When the search was expanded to the United States, it yielded 2098 employer jobs and 202 recruiter jobs out of 8446 job listings from across the globe. ***Job prospects in Agriculture have become so numerous that the College of Agriculture has organized and hosted a dedicated Ag Career and Internship Fair at the University Farm in early February for the last fifteen years.*** As a result of this fair, most of our students looking for employment are promised careers or internships by prospective employers by the end of that same month. This is a significant benefit for our industry partners and for our students. Both parties being able to plan for future employment several months in advance of the heavy summer workload and end of spring semester, and particularly for students, the promise of employment constitutes a huge reduction in anxiety.

Our faculty work closely with our Superior Ag and Ag Advisory Boards and local industry and community partners. These entities have identified critical need for a degree that specifically provides academic preparation in Plant and Soil Science with emphasis on professional certifications (e.g. California Pest Control Advisor, Certified Crop Advisor, Horticultural Therapist, Certified Soil Scientist), as well as urban horticulture, food security, water management, precision agriculture, and food safety. These stakeholders have repeatedly suggested that we alter the degree so that our graduates remain competitive and can be successfully placed. ***The response from these stakeholders, at a recent February 22, 2018 board meeting, when presented with the proposed changes was overwhelmingly positive and complimentary that we would be retaining our integrated core in the major.***

In addition, faculty have heard year after year from transfer students (a large proportion of CHLR Option enrollment) that they need a more clear path and a streamlined program for completing the degree requirements. Faculty advisors have witnessed first hand the confusion over the degree requirements. The current CHLR option does not accept the Transfer Model Curriculum (TMC) developed for Agriculture Plant Sciences. ***The new elevated Plant and Soil Science degree would accept the Agriculture Plant Sciences TMC for BOTH proposed options in this degree program.*** Students surveyed about the proposed changes exclaimed with delight that they would no longer have to explain what their major was to a potential employer. Many of them asked how soon the changes would take place and whether they would be able to swap into the new degree before they graduated. Some, dismayed by the implementation timeline, asked if they could swap their degree name retroactively.

With the recent growth in applied plant and soil research (e.g. via the Organic Vegetable Project at the University Farm, the Agricultural Research Institute, and university, government, and industry partners) the College of Agriculture is in a better position to attract outstanding undergraduates to the proposed degree. The proposed Plant and Soil Science degree will continue to emphasize sustainable land use management and production practices for food, feed, fuel, fiber, and ornamental crops, protection against pests, and stewardship of natural resources. This degree will continue to equip students with skills to competitively pursue graduate education or other professional opportunities in agricultural production, conservation, research, consulting, and regulation. We anticipate that this new degree would increase visibility of the program and attract more students.

Fit with Institutional Mission

The [mission of the College of Agriculture](#) "*To discover, share, and disseminate knowledge of integrated agricultural and environmental systems to students, the agricultural community, and society*" aligns with the University's Core mission and values. The COA has identified five strategic priorities to achieve its mission:

1. *Continually improve student-centered learning in and out of the classroom*
2. *Cultivate excellence in college personnel*
3. *Educate for a sustainable agricultural future*
4. *Serve the North State and beyond*
5. *Practice strategic stewardship of our resources*

We are building upon a subcategory of strategic priority 1 to "*build and enhance plant science program based upon agricultural community needs*" by elevating the CHLR option to a Plant and Soil Science degree. Elevating the option to a degree furthers our ability to address strategic priorities 3 and 5 by highlighting strategic and sustainable stewardship practices that support biodiversity, water quality, water use efficiency, soil quality, and soil health.

Summary

The intent of this proposed change is to maintain the integrated and multidisciplinary nature of the current degree and enhance its visibility with minimal curricular changes and resource requirements. This proposal is in line with the strategic plan of the University and the College of Agriculture. The proposed degree is evidence

of our commitment to the primacy of student learning and service to Northern California. The elevated stand-alone degree will enhance recruiting efforts, retain a high quality curriculum, improve graduation rates, comply with EO 1071, serve our stakeholders, and support fulfillment of our academic mission.

- b. Provide the proposed catalog copy description, including program overview, degree requirements (including course catalog numbers, titles, and units), and admission requirements. For master's degrees, please also include catalog copy describing the culminating experience requirement(s).

Please see attached proposed catalog copy and degree MAPs (Major Academic Plans). Any added courses reflect courses that have typically been substituted into the CHLR option by PSSC academic advisors. It was particularly important to us that we allow all potential prerequisites for upper division coursework to be counted toward requirements in the degree so that students would not have any potential "hidden" requirements.

- c. For undergraduate programs, is the current option part of a major that is considered similar to an existing associate degree, as specified in [SB 1440](#)? Will the new degree be matched to an existing associate degree, and if so, is it certain that the new degree will not require a student to repeat courses similar to those taken for the associate degree? [View list of matched programs.](#)

The current CHLR option does not accept the Agriculture Plant Science TMC. If the proposed elevation is approved, the Agriculture Plant Science TMC will be accepted for BOTH options within the proposed Plant and Soil Science degree.

- d. List additional library resources, equipment, and other specialized materials that will be needed. Provide evidence of consultation with the Library Dean indicating that the program can be supported by the library.

Please see attached correspondence and memo of library support materials from the Meriam Library.

- e. Provide written documentation of the campus approval process with written evidence of a significantly greater campus and administrative commitment to sustain the stand-alone program than was required to establish it as a specialization area.

Please see attached memo from Dean Unruh, signature form, and campus endorsements.

4. Curriculum – *(These requirements conform to the revised 2013 WASC Handbook of Accreditation)*

- a. Provide a side-by-side comparison showing the course requirements of the existing degree major and option on one side and the proposed new major on the other.

Please see the attached side-by-side comparison. Added or deleted text is in RED, while reorganized text is in BLUE.

- b. These program proposal elements are required:

- Comprehensive assessment plan addressing all assessment elements;
- Matrix showing where student learning outcomes are introduced (I), developed (D), and mastered (M)

Key to program planning is creating a comprehensive assessment plan addressing multiple elements, including a strategy and tool to assess each student learning outcome, (directly related to overall institutional and program learning outcomes). Constructing an assessment matrix, showing the relationship between all assessment elements, is an efficient and clear method of displaying all assessment plan components.

Creating a curriculum map matrix, identifying the student learning outcomes, the courses where they are found, and where content is “Introduced,” “Developed,” and “Mastered” insures that all student learning outcomes are directly related to overall program goals and represented across the curriculum at the appropriate times. Assessment of outcomes is expected to be carried out systematically according to an established schedule.

Please see attached assessment plan and matrix.

5. Evidence of Potential Student Demand

Please provide enrollment numbers in the current option for the past three to five years to provide evidence of sustained and possible future interest in the program.

Please see Table 1 and Figure 1. The last ten years of enrollment data are provided as this range of time demonstrates a stable and increased demand for the CHLR option that has somewhat plateaued in the last four academic years. The number of CHLR majors has grown from 38 undergraduates in spring 2008 to 149 in spring 2018 (292%).

We anticipate the elevated option will improve visibility of the program and potentially attract additional majors.

Table 1. Crops, Horticulture, and Land Resource (CHLR) option historical enrollment data. Note: Enrollment in Plant Science and Land Stewardship options were included in AYs spanning 2008-2012 as these options were combined in 2006 to create the existing CHLR option. Source: Institutional Research via Insight Reporting.

AY	Fall	Spring
08-09	41	38
09-10	48	52
10-11	65	74
11-12	97	105
12-13	118	114
13-14	125	119
14-15	141	132
15-16	148	137
16-17	135	130
17-18	140	149
% increase	241%	292%
average % increase		267%

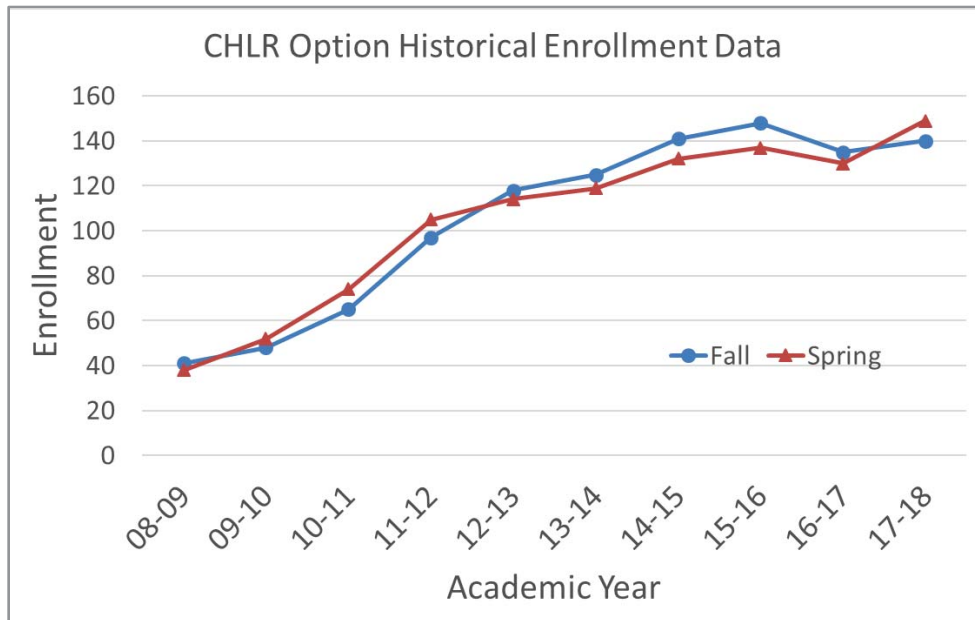


Figure 1. Historical enrollment data spanning the last ten academic years in the CHLR option. Blue line with data point circles represents Fall enrollment after census, Red line with data point triangles represents Spring enrollment after census. Note: Enrollment in Plant Science and Land Stewardship options were included in AYs spanning 2008-2012 as these options were combined in 2006 to create the existing CHLR option. Source: Institutional Research via Insight Reporting.

6. Self-Support Programs - *Not Applicable for this program.*

The Bachelor of Science in Plant and Soil Science

Total Course Requirements for the Bachelor's Degree: 120 units

See [Bachelor's Degree Requirements](#) in the *University Catalog* for complete details on general degree requirements. A minimum of 40 units, including those required for the major, must be upper division.

A suggested Major Academic Plan (MAP) has been prepared to help students meet all graduation requirements within four years. You can view MAPs on the [Degree MAPs](#) page in the *University Catalog* or you can request a plan from your major advisor.

General Education Pathway Requirements: 48 units

See [General Education](#) in the *University Catalog* and the [Class Schedule](#) for the most current information on General Education Pathway Requirements and course offerings.

This major has approved GE modification(s). See below for information on how to apply these modification(s).

- ANSC 101 is an approved major course substitution for Life Sciences (B2).
- AGRI 482W is an approved major course substitution for Upper-Division Social Sciences.

Diversity Course Requirements: 6 units

See [Diversity Requirements](#) in the *University Catalog*. Most courses taken to satisfy these requirements may also apply to [General Education](#).

Upper-Division Writing Requirement:

Writing Across the Curriculum ([Executive Memorandum 17-009](#)) is a graduation requirement and may be demonstrated through satisfactory completion of four Writing (W) courses, two of which are designated by the major department. See [Mathematics/Quantitative Reasoning and Writing Requirements](#) in the *University Catalog* for more details on the four courses. The first of the major designated Writing (W) courses is listed below.

AGRI 490W	Agricultural Experimental Research (W)	4.0	FS	W
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The second major-designated Writing course is the Graduation Writing Assessment Requirement (GW) ([Executive Order 665](#)). Students must earn a C- or higher to receive GW credit. The GE

Written Communication (A2) requirement must be completed before a student is permitted to register for a GW course.

Grading Requirement:

All courses taken to fulfill major course requirements must be taken for a letter grade except those courses specified by the department as Credit/No Credit grading only.

Course Requirements for the Major: 78-83 units

Completion of the following courses, or their approved transfer equivalents, is required of all candidates for this degree. Additional required courses, depending upon the selected option are outlined following the major core program requirements.

Major Core Program: 57-58 units

Lower-Division Core: 33 units

6 courses required:

AGRI 180	The University Experience	1.0	FS	
AGET 150	Agricultural Machine Systems	3.0	FA	
MATH 105	Statistics	3.0	FS	GE
<i>Prerequisites: Completion of ELM requirement.</i>				
PSSC 101	Introduction to Plant Science	3.0	FS	GE
PSSC 250	Introduction to Soil Science	3.0	FA	
<i>Prerequisites: CHEM 107 or CHEM 111.</i>				
ABUS 101	Introduction to Agricultural Business and Economics	3.0	FS	GE

1 course selected from:

ANSC 101	Introduction to Animal Science	3.0	FS	
ANSC 230	Animal Feeds and Nutrition	3.0	FS	

1 course selected from:

CHEM 107	General Chemistry for Applied Sciences	4.0	FS	GE
<i>Prerequisites: Completion of ELM requirement, Intermediate Algebra.</i>				
CHEM 111	General Chemistry	4.0	FS	GE

Prerequisites: Completion of ELM requirement; second-year high school algebra; one year high school chemistry. (One year of high school physics and one year of high school mathematics past Algebra II are recommended.)

1 course selected from:

CHEM 108	Organic Chemistry for Applied Sciences	4.0	FS	GE
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Prerequisites: CHEM 107 or CHEM 111 or equivalent.

CHEM 112	General Chemistry	4.0	FS	
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Prerequisites: CHEM 111 with a grade of C- or better.


6 lower-division units selected from:

In consultation with your advisor, choose any major core course not previously selected, or prerequisites required for upper-division option courses, or the following College of Agriculture courses.

Prerequisite courses

BIOL 151	Principles of Cellular and Molecular Biology		4.0	FS	GE
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Prerequisites: Recommend CHEM 111 or concurrent enrollment.

BIOL 152	Principles of Ecological, Evolutionary, and Organismal Biology		4.0	FS	GE
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Prerequisites: BIOL 151 or faculty permission; recommend CHEM 112 or concurrent enrollment.

BIOL 153	Principles of Physiology and Development		4.0	FS	GE
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Prerequisites: BIOL 151; recommend CHEM 112 or concurrent enrollment.

GEOG 101W	Physical Geography (W)		3.0	SMF	GE W
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Prerequisites: High school biology, chemistry, or physics is recommended.

GEOS 265	Environment III: Water and Soils		3.0	FA	
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Prerequisites: GEOS 165 or SCED 343 (or equivalent).

PHYS 202A	General Physics I		4.0	FS	GE
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Prerequisites: High school physics or faculty permission. High school trigonometry and second-year high school algebra or equivalent (MATH 051 and MATH 118 at CSU, Chico).

PHYS 204A	Physics for Students of Science and Engineering: Mechanics		4.0	FS	GE
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Prerequisites: High school physics or faculty permission. Concurrent enrollment in or prior completion of MATH 121 (second semester of calculus) or equivalent.

RHPM 240	Outdoor Recreation Systems		3.0	FS	GE
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College of Agriculture courses

PSSC 160	West Coast Crop Production		1.0	INQ	
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Note: This course may be repeated more than once for a maximum of 3 units.

PSSC 274	Greenhouse Management		3.0	FA	
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PSSC 266	California Orchard Production and Management		3.0	FA	
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ABUS 231	Computer Applications in Agriculture		3.0	FS	
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ABUS 261	Farm Accounting		3.0	FS	
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Upper-Division Core: 24-25 units

3 courses required:

AGRI 331	Agricultural Ecology		3.0	FS	
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Prerequisites: Completion of lower-division core or faculty permission.

AGRI 482W	Agricultural Issues (W)		3.0	FS	GW W
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Prerequisites: ENGL 130 or JOUR 130 (or equivalent) with a grade of C- or higher, senior standing or instructor permission.

AGRI 490W	Agricultural Experimental Research (W)		4.0	FS	W
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1 course selected from:

PSSC 356	Soil Quality and Health		3.0	SP	
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Prerequisites: PSSC 250 or instructor permission.

PSSC 453	Soil Fertility and Plant Nutrition		3.0	FA	
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Prerequisites: PSSC 250.

1 course selected from:

PSSC 459	Crop Physiology		3.0	SP	
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Prerequisites: PSSC 101, PSSC 250 (or equivalents).

BIOL 414	Plant Physiology		4.0	SP	
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Prerequisites: BIOL 153 or SCED 102; CHEM 108 or CHEM 270; or faculty permission.

BIOL 369 Advanced Plant Biology 3.0 FA

Prerequisites: BIOL 151, BIOL 152, and BIOL 153, or faculty permission.

BIOL 448 Plant Diversity and Identification 4.0 SP

Prerequisites: BIOL 152 or faculty permission.

Note: Crops and Horticulture students are encouraged to enroll in either PSSC 459 or BIOL 414, while Land Resource students are encouraged to enroll in BIOL 448 or BIOL 369.

1 course selected from:

ABUS 321 Agribusiness Management 3.0 FS

Prerequisites: ABUS 101 or equivalent.

ABUS 341 Natural Resource Economics 3.0 FA

Prerequisites: ABUS 101 or faculty permission.

ABUS 464 Farm and Ranch Appraisal 3.0 FA

Prerequisites: ABUS 101.

1 course selected from:

PSSC 441 Principles of Integrated Pest Management  3.0 SP

Prerequisites: AGRI 331; BIOL 446, PSSC 340, or PSSC 343. This course encouraged for Crops and Horticulture students.

AGRI 432 Holistic Management  3.0 SP

Prerequisites: AGRI 331 or faculty permission. This course encouraged for Land Resource students.

1 course for 2 units selected from:

PSSC 309A Directed Work in Field and Row Crops 2.0 FS

Prerequisite: AGET 150 or faculty permission.

PSSC 309B Directed Work in Vegetable Crops 2.0 FS

PSSC 389 Internship in Plant and Soil Science 1.0 -6.0 FS

Prerequisites: Junior standing, faculty permission.

Major Option Course Requirements: 21-25 units

The following courses, or their approved transfer equivalents, are required dependent upon the option chosen. Students must select one of the following options for completion of the major course requirements. Use the links below to jump to your chosen option.

- [The Option in Crops and Horticulture](#)
- [The Option in Land and Soil Resource Management](#)

The Option in Crops and Horticulture: 23-25 units

This option prepares students to manage agricultural enterprises for the production of food, feed, fuel, fiber, and ornamental crops. It comprises protection of these crops and resources against pests (insects, diseases, weeds, vertebrates) and stewardship of their natural resources (soil, water, air, and biota). The option emphasizes sustainable land use and crop production practices. This option equips students with skills to competitively pursue graduate education or other professional opportunities in agricultural consulting, production, conservation, research, and regulation.

2 courses required:

AGRI 305	Agricultural Genetics		3.0	FS
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Prerequisites: ANSC 101 or PSSC 101; CHEM 107 or CHEM 111.

PSSC 353	Plant Protection Materials, Methods, and Regulations		3.0	FA
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Prerequisites: CHEM 107 or CHEM 111; PSSC 250.

Crop Production

2 courses selected from:

AGET 360	Irrigation		3.0	SP
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Prerequisites: PSSC 101 or PSSC 250 or faculty permission.

PSSC 345	Horticultural Therapy		3.0	SP
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PSSC 361	Production of Annual Crops		3.0	FA
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Prerequisite: PSSC 101.

PSSC 363	Forage Crops		3.0	INQ
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Prerequisites: PSSC 101 or PSSC 330.

PSSC 365	Sustainable Vegetable Crop Production		3.0	FA
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Prerequisite: PSSC 101.

PSSC 366	Fruit and Nut Production		3.0	SP
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Prerequisites: AGRI 333, PSSC 101.

Agricultural Pests and Management

1 course selected from:

BIOL 446	Plant Pathology	4.0	FA
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Prerequisites: BIOL 153 or PSSC 101 or faculty permission.

PSSC 340	Economic Entomology	4.0	FA
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PSSC 343	Introduction to Weed Science	3.0	SP
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Prerequisites: AGRI 331.

Crops and Horticulture Electives

8-9 upper-division units selected from:


To fulfill the requirements of this option, select additional upper-division courses from the major core, or option, or listed courses below, or other courses in consultation with your advisor.

AGRI 301	California Agriculture Seminar	3.0	SP
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Prerequisite: Junior or senior standing or faculty permission.

PSSC 305	Introduction to Wines	3.0	FA
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Note: Students may elect to take either PSSC 390 or PSSC 392 to satisfy up to 3 units of upper division electives in this option. Check with your advisor on which one is most appropriate for your career path.

PSSC 390	Food Forever: Comparisons of Sustainable Food Production Systems		3.0	FA	GE GC
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PSSC 392	World Food and Fiber Systems		3.0	SP	GE GC
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The Option in Land and Soil Resource Management: 21 units

Students in this option explore the ecology, extensive management, and conservation of landscapes in the rural-urban interface. This option comprises an ecological and economic approach to protection, sustainable utilization of shared resources and habitats, and control of hazards pertaining to rangelands, wetlands, agro-forestry, and other ecosystems. It equips students with skills to competitively pursue professional opportunities in ecological assessment, natural resource conservation, research, soil science, environmental consulting, regulation, and graduate education.

Landscapes

1 course required:

PSSC 451 Soil Genesis and Classification 3.0 F1

Prerequisites: PSSC 250 or faculty permission.

1 course selected from:

BIOL 350W Fundamentals of Ecology (W)  3.0 FS GW W

Prerequisites: Completion of GE Written Communication (A2) requirement; BIOL 152 or faculty permission.

BIOL 451 Plant Geography 3.0 F2

Prerequisites: BIOL 152, BIOL 369.

BIOL 484 Field Ecology  3.0 SP

Prerequisites: BIOL 152, BIOL 350.

GEOG 342 Geomorphology 3.0 FA

Prerequisites: GEOG 101, GEOS 102, PSSC 101, or PSSC 250; GEOG 211, GEOG 219, or AGET 340.

GEOG 444 Biogeography and Landscape Ecology 3.0 FA


Prerequisites: GEOG 101, GEOS 102, PSSC 101, or PSSC 250; GEOG 211, GEOG 219, or AGET 340.

GEOS 325 Geology of California 3.0 S2

Prerequisites: GEOS 101 or GEOS 102 or consent of instructor.

Resources

1 course selected from:

AGET 340 GPS & GIS in Agriculture and Natural Resource Management  3.0 FA

GEOG 211 Introduction to Geographical Information Systems 3.0 FS

GEOG 427 Environmental Impact Analysis 3.0 SP

Prerequisites: GEOG 320 or equivalent.

GEOS 315 Pollution Science 3.0 SP

Prerequisites: CHEM 107 or CHEM 111.

GEOS 380 Hydrology 3.0 FA

Prerequisites: PHYS 202A or PHYS 204A (may be taken concurrently).

PSSC 363 Forage Crops 3.0 INQ

Management

1 course selected from:

PSSC 330 Rangeland Resources and Management 3.0 FA

PSSC 453 Soil Fertility and Plant Nutrition 3.0 FA

Prerequisites: PSSC 250.

GEOG 320 Introduction to Land Use Planning  3.0 FA

GEOG 445 Pyrogeography  3.0 S1

Prerequisites: GEOG 101; AGRI 331, BIOL 350, BIOL 414, GEOG 343, GEOG 405S, GEOG 444, or PSSC 330.

GEOS 460 Water Resources Management  3.0 S2

Prerequisites: GEOS 380.

RHPM 446 Natural Resources Management  3.0 FA

Prerequisites: RHPM 240, RHPM 300, or faculty permission.

Land and Soil Resource Management Electives

9 upper-division units selected from:

To fulfill the requirements of this option, select additional upper-division courses from the major core, or option, or listed courses below, or other courses in consultation with your advisor.

BIOL 334 Conservation Ecology  3.0 FS GE

Prerequisites: One biological sciences course.

Advising Requirement:

Advising is mandatory for all majors in this degree program. Consult your undergraduate advisor for specific information.

Honors in the Major:

Honors in the Major is a program of independent work in your major. It requires 6 units of honors course work completed over two semesters.

The Honors in the Major program allows you to work closely with a faculty mentor in your area of interest on an original performance or research project. This year-long collaboration allows you to work in your field at a professional level and culminates in a public presentation of your work. Students sometimes take their projects beyond the University for submission in professional journals, presentation at conferences, or academic competition. Such experience is valuable for

graduate school and professional life. Your honors work will be recognized at your graduation, on your permanent transcripts, and on your diploma. It is often accompanied by letters of commendation from your mentor in the department or the department chair.

Some common features of Honors in the Major program are:

1. You must take 6 units of Honors in the Major course work. All 6 units are honors classes (marked by a suffix of H), and at least 3 of these units are independent study (399H, 499H, 599H) as specified by your department. You must complete each class with a minimum grade of B.
2. You must have completed 9 units of upper-division course work or 21 overall units in your major before you can be admitted to Honors in the Major. Check the requirements for your major carefully, as there may be specific courses that must be included in these units.
3. Your *cumulative* GPA should be at least 3.5 or within the top 5% of majors in your department.
4. Your GPA *in your major* should be at least 3.5 or within the top 5% of majors in your department.
5. Most students apply for or are invited to participate in Honors in the Major during the second semester of their junior year. Then they complete the 6 units of course work over the two semesters of their senior year.
6. Your honors work culminates with a public presentation of your honors project.

While Honors in the Major is part of the Honors Program, each department administers its own program. Please contact your major department or major advisor to apply.

California State University, Chico
MAJOR ACADEMIC PLAN (MAP)

Major: The Bachelor of Science in Plant and Soil Science

Option: Crops and Horticulture (CH)

Degree Units: 120

Major Units: 80-83

Elective Units: 9-10

First Semester	
AGRI 180	1
MATH 105 (GE Area A4) [*C-]	3
AGET 150 (F)	3
PSSC 101 (GE Area B2)	3
GE Area E	3
GE Area A [*C-]	3
Total Units:	16

Second Semester	
ABUS 101 (GE Area D1)	3
ANSC 101 (GE Area B2) or	
ANSC 230	3
GE Area A [*C-]	3
GE Area C [*W or FL]	3
GE Area D2 [*USD]	3
Total Units:	15

Third Semester	
CHEM 107 or CHEM 111 (GE Area B1)	4
Major LD Elective [*LD Elect]	3
HIST 130 or POLS 155	3
PSSC 250 (F)	3
Elective	3
Total Units:	16

Fourth Semester	
CHEM 108 or CHEM 112	4
Major LD Elective [*LD Elect]	3
HIST 130 or POLS 155	3
GE Area C [*W or FL]	3
Elective	3
Total Units:	16

Fifth Semester	
AGRI 331	3
ABUS 321 or ABUS 341 (F) or	
ABUS 464 (F)	3
PSSC 356 (S) or PSSC 453 (F)	3
PSSC 353 (F)	3
CH Option Crop Production course	3
Total Units:	15

Sixth Semester	
BIOL 369 (F) or BIOL 414 (S) or	
BIOL 448 (S) or PSSC 459 (S)	3-4
PSSC 309A or PSSC 309B or	
PSSC 389	2
AGRI 305	3
GE UD Pathway [*GC; PSSC]	3
CH Option Ag Pests & Mgmt course	3
Total Units:	14-15

Seventh Semester	
AGRI 482W (GW) [*C-] [*UD Mod]	3
GE UD Pathway	3
CH Option Crop Production course	3
CH Option Elective	3
CH Option Elective	3
Total Units:	15

Eighth Semester	
AGRI 432 (S) or PSSC 441 (S)	3
AGRI 490W (W)	4
CH Option Elective	3
Elective (3-4 units as needed)	3-4
Total Units:	13-14

Comments
[*C-] C- or Better is required.
[*LD Elect] In consultation with your advisor, choose 6 LD units from any major core course not previously selected, or upper-division option course prerequisites, or College of Agriculture courses as listed in the catalog.
[*W or FL] Consider taking either a Writing or Foreign Language course.
[*USD] Consider selecting a United States Diversity course.
[*UD Mod] AGRI 482W satisfies the Social Science component of your UD GE pathway.
[*GC; PSSC] Consider selecting one of either PSSC 390 (F) or PSSC 392 (S) Global Cultures designated courses in consultation with your advisor.

Notes
Review your Degree Progress Report (DPR) in your Student Center, meet with your Major Department Advisor for major coursework, and meet with an Academic Advisor in SSC 220 to review General Education and Graduation requirements. Department advising is required for this major.
University Writing Requirement: You must complete a GE Written Communication (A2) course with a grade of C- or higher, a Graduation Writing Assessment Requirement (GW) course in your major with a grade of C- or higher, and 2 additional Writing (W) courses; see your DPR for specific writing course options.
If you apply to graduate one year before anticipated graduation date, priority registration is guaranteed in your final semester.

California State University, Chico
MAJOR ACADEMIC PLAN (MAP)

Major: The Bachelor of Science in Plant and Soil Science
Option: Crops and Horticulture (CH)

Degree Units: 120
Major Units: 80-83
Elective Units: 9-10

First Semester	
AGRI 180	1
MATH 105 (GE Area A4) [*C-]	3
AGET 150 (F)	3
PSSC 101 (GE Area B2)	3
GE Area E	3
GE Area A [*C-]	3
Total Units:	16

Second Semester	
ABUS 101 (GE Area D1)	3
ANSC 101 (GE Area B2) or	
ANSC 230	3
GE Area A [*C-]	3
GE Area C [*W or FL]	3
GE Area D2 [*USD]	3
Total Units:	15

Third Semester	
CHEM 107 or CHEM 111 (GE Area B1)	4
Major LD Elective [*LD Elect]	3
HIST 130 or POLS 155	3
PSSC 250 (F)	3
Elective	3
Total Units:	16

Fourth Semester	
CHEM 108 or CHEM 112	4
Major LD Elective [*LD Elect]	3
HIST 130 or POLS 155	3
GE Area C [*W or FL]	3
Elective	3
Total Units:	16

Fifth Semester	
AGRI 331	3
ABUS 321 or ABUS 341 (F) or	
ABUS 464 (F)	3
PSSC 356 (S) or PSSC 453 (F)	3
PSSC 353 (F)	3
CH Option Crop Production course	3
Total Units:	15

Sixth Semester	
BIOL 369 (F) or BIOL 414 (S) or	
BIOL 448 (S) or PSSC 459 (S)	3-4
PSSC 309A or PSSC 309B or	
PSSC 389	2
AGRI 305	3
GE UD Pathway [*GC; PSSC]	3
CH Option Ag Pests & Mgmt course	3
Total Units:	14-15

Seventh Semester	
AGRI 482W (GW) [*C-] [*UD Mod]	3
GE UD Pathway	3
CH Option Crop Production course	3
CH Option Elective	3
CH Option Elective	3
Total Units:	15

Eighth Semester	
AGRI 432 (S) or PSSC 441 (S)	3
AGRI 490W (W)	4
CH Option Elective	3
Elective (3-4 units as needed)	3-4
Total Units:	13-14

Comments
[*C-] C- or Better is required.
[*LD Elect] In consultation with your advisor, choose 6 LD units from any major core course not previously selected, or upper-division option course prerequisites, or College of Agriculture courses as listed in the catalog.
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[*USD] Consider selecting a United States Diversity course.
[*UD Mod] AGRI 482W satisfies the Social Science component of your UD GE pathway.
[*GC; PSSC] Consider selecting one of either PSSC 390 (F) or PSSC 392 (S) Global Cultures designated courses in consultation with your advisor.

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University Writing Requirement: You must complete a GE Written Communication (A2) course with a grade of C- or higher, a Graduation Writing Assessment Requirement (GW) course in your major with a grade of C- or higher, and 2 additional Writing (W) courses; see your DPR for specific writing course options.
If you apply to graduate one year before anticipated graduation date, priority registration is guaranteed in your final semester.

Elizabeth "Betsy" A Boyd

From: Elizabeth "Betsy" A Boyd
Sent: Friday, April 27, 2018 3:31 PM
To: Kristopher A Blee; 'Kristina Schierenbeck'; Jonathan R Day; Kristina A Schierenbeck; Christopher Ivey; Colleen A Hatfield
Cc: Stephen Patrick Doyle; John A Unruh; Lee Altier; Elizabeth "Betsy" A Boyd
Subject: RE: PSSC curricular changes
Attachments: Plant & Soil Science catalog copy.pdf

Good afternoon Biology Colleagues,

The College of Agriculture Curriculum Committee approved the PSSC faculty proposal to elevate the option last Friday. I wanted to follow up to let you know that we fixed the typo and added BIOL 451 into the program and have made sure that at least the minimum prerequisite courses needed are also counted in the major (as electives or otherwise).

Additionally, collaboration with other departments led to some other minor changes to other courses we included in the proposed catalog copy. I've attached the final proposed copy for you to peruse if you are interested.

Thank you for your continued partnership and support of our students and of this program!

Have a great weekend!
Betsy

Elizabeth "Betsy" A. Boyd, Ph.D.

Associate Professor – Plant Science

College of Agriculture, California State University, Chico
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Tel: (530) 898-6879
Fax: (530) 898-5845

Immediate Past Chair, Academic Senate

Campus Zip: 002
Tel: (530) 898-6201
Fax: (530) 898-4200
www.csuchico.edu/fs

From: Elizabeth "Betsy" A Boyd
Sent: Thursday, April 19, 2018 9:42 PM
To: Christopher Ivey <ctivey@csuchico.edu>; Jonathan R Day <JDay@csuchico.edu>
Cc: Kristopher A Blee <KBlee@csuchico.edu>; Kristina A Schierenbeck <KSchierenbeck@csuchico.edu>; Colleen A Hatfield <chatfield@csuchico.edu>
Subject: RE: PSSC curricular changes

Thank you, Chris! Nice catch on that typo. Much appreciated!

Betsy

To: Marc L Langston <mlangston@csuchico.edu>

Subject: RE: Library resources

Thank you Marc!

From: Marc L Langston

Sent: Friday, April 20, 2018 9:54 AM

To: Elizabeth "Betsy" A Boyd <eaboyle@csuchico.edu>

Subject: RE: Library resources

Hello Betsy: I'm working on the document right now, and should have it complete by the end of the day.

Marc Langston

Head, Acquisitions and Collection Assessment

Meriam Library

California State University, Chico

Chico, CA 95929-0295

USA

Ph. (530) 898-4587

Email: mlangston@csuchico.edu

From: Elizabeth "Betsy" A Boyd

Sent: Friday, April 20, 2018 8:14 AM

To: Patrick A Newell <pnewell@csuchico.edu>; Marc L Langston <mlangston@csuchico.edu>

Subject: RE: Library resources

Importance: High

Good morning Marc and Patrick,

Just following up to see if there are any figures or documents I can provide to help with the analysis of resources for our proposal to elevate the Crops, Horticulture, and Land Resource Management option to a standalone Plant and Soil Science degree.

Thanks so much!

Betsy

From: Elizabeth "Betsy" A Boyd

Sent: Saturday, April 14, 2018 8:01 PM

To: Patrick A Newell <pnewell@csuchico.edu>

Cc: Marc L Langston <mlangston@csuchico.edu>

Subject: RE: Library resources

Thank you Patrick!

Marc, if there is anything I can do to help, please let me know.

By the way, recent enrollment data for spring 2018 is 149 majors.

Take care,
Betsy

Elizabeth "Betsy" A. Boyd, Ph.D.

Associate Professor – Plant Science

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From: Patrick A Newell
Sent: Sunday, April 8, 2018 10:28 AM
To: Elizabeth "Betsy" A Boyd <eaboyd@csuchico.edu>
Subject: Re: Library resources

Good afternoon, Betsy,

Thanks for letting me know about this. The Meriam Library supports the academic programs of the University, and I'm glad to know the College of Agriculture is updating its educational offerings. We'll do an analysis of our book collection, online abstracting and indexing databases, and journals (paper and electronic) to document our support of the new option.

I've copied Marc Langston on this email. He will conduct an analysis of what our collections include that support this option and will let you know when you can expect his report.

Hope April's treating you well; this seems to be the busiest time of the entire academic year for some reason.

Best,

Patrick

Patrick Newell
pnewell@csuchico.edu
work 530.898.5394
text 559.824.4269

From: Elizabeth A Boyd Betsy <eaboyd@csuchico.edu>
Date: Friday, April 6, 2018 at 4:36 PM
To: Patrick A Newell <pnewell@csuchico.edu>
Subject: Library resources

Good afternoon Patrick,

The plant and soil science faculty are completing a proposal that would elevate the existing Option in Crops, Horticulture, and Land Resource Management within the degree of Agriculture to its own stand-alone degree. If approved, the degree would get a shiny new name: Plant and Soil Science.

In terms of specific proposed changes, aside from the elevation, the current proposal uses only pre-existing university courses, but may lead to increased section numbers in some PSSC and AGRI courses if the popularity and enrollment into the major increases over time.

Many of our students use the library regularly, both its physical space and online resources. Initially, we do not expect a sharp increase in enrolled students (Fall 2016 - 133 majors in the CHLR option), but as word of mouth and visibility of the program improves, it is likely that we could see the number of majors increase.

Long story short, we don't anticipate additional strain on the library resources initially, but that could change with time. What are your thoughts? Would you support this proposed change? Can I provide you with any additional information or documents that might be helpful in determining impact to the library?

We are hopeful for a successful outcome with the proposal, of course, but it would not be successful without support from the library. With your permission, I would like to use this email correspondence in our proposal.

Betsy

P.S. Thank you for INSPIRING our campus last week!

Elizabeth "Betsy" A. Boyd, Ph.D.

Associate Professor – Plant Science

College of Agriculture, California State University, Chico

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Meriam Library
California State University, Chico

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MEMORANDUM

To: Dr. Elizabeth Boyd

From: Marc Langston

Date: April 20, 2018

Subject: Library materials support for Agriculture program changes, specifically the new Plant and Soil Science major

Agriculture covers a broad range of disciplines. Those specific to the new major in Plant and Soil Science are classified under the Library of Congress classifications of S, Agriculture (General) and SB, Plant Culture. The numbers of materials currently held in the Meriam Library that would support this new program are listed below:

Print Books: 5,769 titles

Print journals: 497 titles

E-books: 801 titles

E-journals: 627 titles

Databases: Agricola, CAB Abstracts, Academic Search, American Chemical Society, Science Direct

In addition to resources currently held in the Library, Agriculture is allotted an annual book budget to purchase new library materials. Selection of these new materials is overseen by the Library's Agriculture Librarian, who also makes available information literacy instruction for all Agriculture classes.

The Meriam Library currently provides adequate access to both electronic and physical library and learning resources that would support the new Plant and Soil Science major.



DATE: April 20, 2018

TO: EPPC
Academic Senate
Chancellor's Office

FROM: John Unruh, Dean
College of Agriculture

A handwritten signature in blue ink, appearing to be 'JU'.

SUBJECT: Elevate Undergraduate Option to Degree
Plant and Soil Science

The College of Agriculture supports the elevation of the Crops, Horticulture and Land Resource Management option in Agriculture to a standalone degree in Plant and Soil Science. Currently, the degree in Agriculture offers two options: Crops, Horticulture and Resource Management; and Agriscience and Education. These two options do not share at least fifty-percent of their coursework, as mandated by the Chancellor's Office EO1071. The elevation of this option to a standalone BS degree aligns with similar degrees in other Colleges of Agriculture. The updated degree has been shared with our advisory group of stakeholders and alumni. They enthusiastically supported this elevation to a degree.

The Plant Science program is committed to the university's mission and goals with graduates in high demand in the Agriculture Industry. The College of Agriculture has and will continue to provide support for this program through this change and into the future.

1 course selected from:

CHEM 107 General Chemistry for Applied Sciences 4.0 FS

Prerequisites: Completion of ELM requirement, Intermediate Algebra.

CHEM 111 General Chemistry 4.0 FS

Prerequisites: Completion of ELM requirement; second-year high school algebra; one year high school chemistry. (One year of high school physics and one year of high school mathematics past Algebra II are recommended.)

1 course selected from:

CHEM 108 Organic Chemistry for Applied Sciences 4.0 FS

Prerequisites: CHEM 107 or CHEM 111 or equivalent.

CHEM 112 General Chemistry 4.0 FS

Prerequisites: CHEM 111 with a grade of C- or better.

6 units selected from:

Any combination of lower division courses in Agriculture (AGRI), Agricultural Engineering Technology (AGET), Animal Science (ANSC), Plant Science (PSSC), and Agricultural Business (ABUS). Choose courses in consultation with your advisor.

PSSC 250 Introduction to Soil Science 3.0 SP

Prerequisites: CHEM 107 or CHEM 111.

ABUS 101 Introduction to Agricultural Business and Economics 3.0 FS

1 course selected from:

ANSC 101 Introduction to Animal Science 3.0 FS

ANSC 230 Animal Feeds and Nutrition 3.0 FS

1 course selected from:

CHEM 107 General Chemistry for Applied Sciences 4.0 FS

Prerequisites: Completion of ELM requirement, Intermediate Algebra.

CHEM 111 General Chemistry 4.0 FS

Prerequisites: Completion of ELM requirement; second-year high school algebra; one year high school chemistry. (One year of high school physics and one year of high school mathematics past Algebra II are recommended.)

1 course selected from:

CHEM 108 Organic Chemistry for Applied Sciences 4.0 FS

Prerequisites: CHEM 107 or CHEM 111 or equivalent.

CHEM 112 General Chemistry 4.0 FS

Prerequisites: CHEM 111 with a grade of C- or better.

6 lower-division units selected from:

In consultation with your advisor, choose any major core course not previously selected, or prerequisites required for upper-division option courses, or the following College of Agriculture courses. Any combination of lower division courses in Agriculture (AGRI), Agricultural Engineering Technology (AGET), Animal Science (ANSC), Plant Science (PSSC), and Agricultural Business (ABUS). Choose courses in consultation with your advisor.

Prerequisite courses

BIOL 151 Principles of Cellular & Molecular Biology 4.0 FS

Prerequisites: Recommend CHEM 111 or concurrent enrollment.

BIOL 152 Principles of Ecological, Evolutionary, and Organismal Biology 4.0 FS

Prerequisites: BIOL 151 or faculty permission; recommend CHEM 112 or concurrent enrollment.

BIOL 153 Principles of Physiology and Development 4.0 FS

Prerequisites: BIOL 151; recommend CHEM 112 or concurrent enrollment.

GEOG 101W Physical Geography (W) 3.0 SMF

Prerequisites: High school biology, chemistry, or physics is recommended.

GEOS 265 Environment III: Water and Soils 3.0 FA

Prerequisites: GEOS 165 or SCED 343 (or equivalent).

PHYS 202A General Physics I 4.0 FS

Prerequisites: High school physics or faculty permission. High school trigonometry and second-year high school algebra or equivalent (MATH 051 and MATH 118 at CSU, Chico).

PHYS 204A Physics for Students of Science and Engineering: Mechanics 4.0 FS

Prerequisites: High school physics or faculty permission. Concurrent enrollment in or prior completion of MATH 121 (second semester of calculus) or equivalent.

RHPM 240 Outdoor Recreation Systems 3.0 FS

College of Agriculture courses

PSSC 160 West Coast Crop Production 1.0 INQ

Note: This course may be repeated more than once for a maximum of 3 units.

PSSC 274 Greenhouse Management 3.0 FA

PSSC 266 California Orchard Production and Management 3.0 FA

	<p>ABUS 231 Computer Applications in Agriculture 3.0 FS</p> <p>ABUS 261 Farm Accounting 3.0 FS</p>
<p>Upper Division Core: 9 units</p> <p>3 courses required:</p> <p>AGRI 305 Agricultural Genetics 3.0 FS <i>Prerequisites: ANSC 101 or PSSC 101; CHEM 107 or CHEM 111.</i></p> <p>AGRI 331 Agricultural Ecology 3.0 FS <i>Prerequisites: Completion of lower-division core or faculty permission.</i></p> <p>AGRI 482W Agricultural Issues (W) 3.0 FS <i>Prerequisites: ENGL 130 or JOUR 130 (or equivalent) with a grade of C- or higher, senior standing or instructor permission.</i></p> <p>Note: AGRI 305 may be substituted for an approved elective in the Land Resource Management area of study.</p>	<p>Upper Division Core: 924-25 units</p> <p>3 courses required:</p> <p>AGRI 305 Agricultural Genetics 3.0 FS <i>Prerequisites: ANSC 101 or PSSC 101; CHEM 107 or CHEM 111.</i></p> <p>AGRI 331 Agricultural Ecology 3.0 FS <i>Prerequisites: Completion of lower-division core or faculty permission.</i></p> <p>AGRI 482W Agricultural Issues (W) 3.0 FS <i>Prerequisites: ENGL 130 or JOUR 130 (or equivalent) with a grade of C- or higher, senior standing or instructor permission.</i></p> <p>AGRI 490W Agricultural Experimental Research (W) 4.0 FS</p> <p>Note: AGRI 305 may be substituted for an approved elective in the Land Resource Management area of study.</p> <p>1 course selected from:</p> <p>PSSC 356 Soil Quality and Health 3.0 SP <i>Prerequisites: PSSC 250 or instructor permission.</i></p> <p>PSSC 453 Soil Fertility and Plant Nutrition 3.0 F2 <i>Prerequisites: PSSC 250.</i></p> <p>1 course selected from:</p> <p>PSSC 459 Crop Physiology 3.0 SP <i>Prerequisites: PSSC 101, PSSC 250 (or equivalent).</i></p> <p>BIOL 414 Plant Physiology 4.0 SP <i>Prerequisites: BIOL 153 or SCED 102; CHEM 108 or CHEM 270; or faculty permission.</i></p>

	<p><i>Prerequisites: PSSC 250 or faculty permission.</i> PSSC 389 Internship in Plant and Soil Science 1.0-6.0 FS <i>Prerequisites: Junior standing, faculty permission.</i> PSSC 389 must be taken for 2 units.</p>
<p>Major Option Course Requirements: 45-50 units Option in Crops, Horticulture, and Land Resource Management: 45-50 units</p>	<p>Major Option Course Requirements: 45-5021-25 units Option in Crops, Horticulture, and Land Resource Management: 45-50 units</p>
<p>Option Core: 24-25 units</p> <p>2 courses required: AGRI 490W Agricultural Experimental Research (W) 4.0 FS</p> <p>PSSC 250 Introduction to Soil Science 3.0 SP <i>Prerequisites: CHEM 107 or CHEM 111.</i></p> <p>1 course selected from: ABUS 101 Introduction to Agricultural Business and Economics 3.0 FS</p> <p>ABUS 261 Farm Accounting 3.0 FS</p> <p>1 course selected from: ANSC 101 Introduction to Animal Science 3.0 FS</p> <p>ANSC 230 Animal Feeds and Nutrition 3.0 FS</p> <p>1 course selected from: PSSC 356 Soil Quality and Health 3.0 SP</p>	<p>Option Core: 24-25 units</p> <p>2 courses required: AGRI 490W Agricultural Experimental Research (W) 4.0 FS</p> <p>PSSC 250 Introduction to Soil Science 3.0 SP <i>Prerequisites: CHEM 107 or CHEM 111.</i></p> <p>1 course selected from: ABUS 101 Introduction to Agricultural Business and Economics 3.0 FS</p> <p>ABUS 261 Farm Accounting 3.0 FS</p> <p>1 course selected from: ANSC 101 Introduction to Animal Science 3.0 FS</p> <p>ANSC 230 Animal Feeds and Nutrition 3.0 FS</p> <p>1 course selected from: PSSC 356 Soil Quality and Health 3.0 SP</p>

<i>Prerequisites: PSSC 250 or instructor permission.</i>				<i>Prerequisites: PSSC 250 or instructor permission.</i>			
PSSC 451	Soil Genesis and Classification	3.0	F1	PSSC 451	Soil Genesis and Classification	3.0	F1
<i>Prerequisites: PSSC 250 or faculty permission.</i>				<i>Prerequisites: PSSC 250 or faculty permission.</i>			
PSSC 453	Soil Fertility and Plant Nutrition	3.0	F2	PSSC 453	Soil Fertility and Plant Nutrition	3.0	F2
<i>Prerequisites: PSSC 250.</i>				<i>Prerequisites: PSSC 250.</i>			
1 course selected from:				1 course selected from:			
BIOL 414	Plant Physiology	4.0	SP	BIOL 414	Plant Physiology	4.0	SP
<i>Prerequisites: BIOL 153 or SCED 102; CHEM 108 or CHEM 270; or faculty permission.</i>				<i>Prerequisites: BIOL 153 or SCED 102; CHEM 108 or CHEM 270; or faculty permission.</i>			
BIOL 448	Plant Diversity and Identification	4.0	SP	BIOL 448	Plant Diversity and Identification	4.0	SP
<i>Prerequisites: BIOL 152 or faculty permission.</i>				<i>Prerequisites: BIOL 152 or faculty permission.</i>			
PSSC 459	Crop Physiology	3.0	SP	PSSC 459	Crop Physiology	3.0	SP
<i>Prerequisites: PSSC 101, PSSC 250 (or equivalents).</i>				<i>Prerequisites: PSSC 101, PSSC 250 (or equivalents).</i>			
1 course selected from:				1 course selected from:			
ABUS 231	Computer Applications in Agriculture	3.0	FS	ABUS 231	Computer Applications in Agriculture	3.0	FS
ABUS 321	Agribusiness Management	3.0	FS	ABUS 321	Agribusiness Management	3.0	FS
<i>Prerequisites: ABUS 101 or equivalent.</i>				<i>Prerequisites: ABUS 101 or equivalent.</i>			
ABUS 464	Farm and Ranch Appraisal	3.0	FA	ABUS 464	Farm and Ranch Appraisal	3.0	FA
<i>Prerequisites: ABUS 101.</i>				<i>Prerequisites: ABUS 101.</i>			
AGRI 432	Holistic Management	3.0	SP	AGRI 432	Holistic Management	3.0	SP
<i>Prerequisites: AGRI 331 or faculty permission.</i>				<i>Prerequisites: AGRI 331 or faculty permission.</i>			
1 course selected from:				1 course selected from:			
PSSC 309A	Directed Work in Field and Row Crops	2.0	FS	PSSC 309A	Directed Work in Field and Row Crops	2.0	FS
<i>Prerequisite: AGET 150 or faculty permission.</i>				<i>Prerequisite: AGET 150 or faculty permission.</i>			
PSSC 309B	Directed Work in Vegetable Crops	2.0	FS	PSSC 309B	Directed Work in Vegetable Crops	2.0	FS
<i>Prerequisites: PSSC 250 or faculty permission.</i>				<i>Prerequisites: PSSC 250 or faculty permission.</i>			
PSSC 389	Internship in Plant and Soil Science	1.0-6.0	FS	PSSC 389	Internship in Plant and Soil Science	1.0-6.0	FS
<i>Prerequisites: Junior standing, faculty permission.</i>				<i>Prerequisites: Junior standing, faculty permission.</i>			

PSSC 389 must be taken for 2 units.	PSSC 389 must be taken for 2 units.
Area of Study: 21-25 units	The Option in Crops and Horticulture 23-25 units Area of Study: 21-25 units
<p>Crops and Horticulture Area of Study: 23-25 units</p> <p>1 course required: PSSC 353 Plant Protection Materials and Methods 3.0 FA <i>Prerequisites: CHEM 107 or CHEM 111; PSSC 250.</i></p> <p>Crop Production 2 courses selected from: AGET 360 Irrigation 3.0 SP <i>Prerequisites: PSSC 101 or PSSC 250 or faculty permission.</i> PSSC 274 Greenhouse Management 3.0 FA</p> <p>PSSC 361 Production of Annual Crops 3.0 FA <i>Prerequisite: PSSC 101.</i> PSSC 363 Forage Crops 3.0 INQ <i>Prerequisites: PSSC 101 or PSSC 330.</i> PSSC 365 Sustainable Vegetable Crop Production 3.0 FA <i>Prerequisite: PSSC 101.</i> PSSC 366 Fruit and Nut Production 3.0 SP <i>Prerequisites: AGRI 333, PSSC 101.</i></p> <p>Agricultural Pests and Control 2 courses selected from: BIOL 446 Plant Pathology 4.0 FA <i>Prerequisites: BIOL 153 or PSSC 101 or faculty permission.</i> PSSC 340 Economic Entomology 3.0 FA</p>	<p>Crops and Horticulture Area of Study: 23-25 units</p> <p>12 courses required: AGRI 305 Agricultural Genetics 3.0 FS <i>Prerequisites: ANSC 101 or PSSC 101; CHEM 107 or CHEM 111.</i> PSSC 353 Plant Protection Materials, and Methods, & Regulations 3.0 FA <i>Prerequisites: CHEM 107 or CHEM 111; PSSC 250.</i></p> <p>Crop Production 2 courses selected from: AGET 360 Irrigation 3.0 SP <i>Prerequisites: PSSC 101 or PSSC 250 or faculty permission.</i> PSSC 274 Greenhouse Management 3.0 FA</p> <p>PSSC 345 Horticultural Therapy 3.0 SP</p> <p>PSSC 361 Production of Annual Crops 3.0 FA <i>Prerequisite: PSSC 101.</i> PSSC 363 Forage Crops 3.0 INQ <i>Prerequisites: PSSC 101 or PSSC 330.</i> PSSC 365 Sustainable Vegetable Crop Production 3.0 FA <i>Prerequisite: PSSC 101.</i> PSSC 366 Fruit and Nut Production 3.0 SP <i>Prerequisites: AGRI 333, PSSC 101.</i></p>

PSSC 343 Introduction to Weed Science 3.0 SP
 Prerequisites: AGRI 331.
 PSSC 441 Principles of Integrated Pest Management 3.0 SP
 Prerequisites: AGRI 331; BIOL 446, PSSC 340, or PSSC 343.

8-9 units selected from:

To fulfill the requirements of this option, select additional upper-division courses from the option core and this area of study in consultation with your advisor.

Agricultural Pests and ~~Control~~ Management

21 courses selected from:

BIOL 446 Plant Pathology 4.0 FA
Prerequisites: BIOL 153 or PSSC 101 or faculty permission.
 PSSC 340 Economic Entomology ~~4.0~~ FA

PSSC 343 Introduction to Weed Science 3.0 SP
Prerequisites: AGRI 331.

~~PSSC 441 Principles of Integrated Pest Management 3.0 SP~~

~~Prerequisites: AGRI 331; BIOL 446, PSSC 340, or PSSC 343.~~

Crops and Horticulture Electives

8-9 upper-division units selected from:

To fulfill the requirements of this option, select additional upper-division courses from the major core, or option, or other courses in consultation with your advisor. ~~To fulfill the requirements of this option, select additional upper-division courses from the option core this area of study in consultation with your advisor.~~

AGRI 301 California Agriculture Seminar 3.0 SP
Prerequisite: Junior or senior standing or faculty permission.

PSSC 305 Introduction to Wines 3.0 FA

Note: Students may elect to take either PSSC 390 or PSSC 392 to satisfy up to 3 units of upper division electives in this option. Check with your advisor on which one is most appropriate for your career path.

PSSC 390 Food Forever: Comparisons of Sustainable Food Production Systems 3.0 FA

PSSC 392 World Food and Fiber Systems 3.0 SP

Land Resource Management Area of Study: 21 units

2 courses required:

BIOL 350 Fundamentals of Ecology 3.0 FS

Prerequisites: Completion of GE Written Communication (A2) requirement; BIOL 152 or faculty permission.

PSSC 451 Soil Genesis and Classification 3.0 F1

Prerequisites: PSSC 250 or faculty permission.

1 course selected from:

AGET 340 GPS & GIS in Agriculture and Natural Resource Management 3.0 FA

GEOG 211 Introduction to Geographical Information Systems 3.0 FS

GEOG 219 Introduction to Geographic Methods 3.0 FS

1 course selected from:

GEOG 342 Geomorphology 3.0 FA

Prerequisites: GEOG 101, GEOS 102, PSSC 101, or PSSC 250; GEOG 211, GEOG 219, or AGET 340.

GEOS 325 Geology of California 3.0 S2

Prerequisites: GEOS 101 or GEOS 102 or consent of instructor.

9 units selected from:

To fulfill the requirements of this option, select additional upper-division courses from the option core and this area of study in consultation with your advisor.

The Option in Land and Soil Resource Management: ~~Land Resource Management Area of Study~~: 21 units

Landscapes

1 course required:

PSSC 451 Soil Genesis and Classification 3.0 F1

Prerequisites: PSSC 250 or faculty permission.

1 course selected from:

~~2 courses required:~~

BIOL 350W Fundamentals of Ecology (W) 3.0 FS

Prerequisites: Completion of GE Written Communication (A2) requirement; BIOL 152 or faculty permission.

BIOL 451 Plant Geography 3.0 F2

Prerequisites: BIOL 152, BIOL 369.

BIOL 484 Field Ecology 3.0 SP

Prerequisites: BIOL 152, BIOL 350.

GEOG 342 Geomorphology 3.0 FA

Prerequisites: GEOG 101, GEOS 102, PSSC 101, or PSSC 250; GEOG 211, GEOG 219, or AGET 340.

GEOG 444 Biogeography & Landscape Ecology 3.0 FA

Prerequisites: GEOG 101, GEOS 102, PSSC 101, or PSSC 250; GEOG 211, GEOG 219, or AGET 340.

GEOS 325 Geology of California 3.0 S2

Prerequisites: GEOS 101 or GEOS 102 or consent of instructor.

~~PSSC 451 Soil Genesis and Classification 3.0 F1~~

~~Prerequisites: PSSC 250 or faculty permission.~~

Resources

1 course selected from:

AGET 340	GPS & GIS in Agriculture and Natural Resource Management	3.0	FA
GEOG 211	Introduction to Geographical Information Systems	3.0	FS
GEOG 219	Introduction to Geographic Methods	3.0	FS
GEOG 427	Environmental Impact Analysis <i>Prerequisites: GEOG 320 or equivalent.</i>	3.0	SP
GEOS 315	Pollution Science <i>Prerequisites: CHEM 107 or CHEM 111.</i>	3.0	SP
GEOS 380	Hydrology <i>Prerequisites: PHYS 202A or PHYS 204A (may be taken concurrently).</i>	3.0	FA
PSSC 363	Forage Crops	3.0	INQ
Management			
1 course selected from:			
PSSC 330	Rangeland Resources & Management	3.0	FA
PSSC 453	Soil Fertility and Plant Nutrition <i>Prerequisites: PSSC 250.</i>	3.0	FA
GEOG 320	Introduction to Land Use Planning	3.0	FA
GEOG 445	Pyrogeography <i>Prerequisites: GEOG 101; AGRI 331, BIOL 350, BIOL 414, GEOG 343, GEOG 405S, GEOG 444, or PSSC 330.</i>	3.0	S1
GEOS 460	Water Resources Management <i>Prerequisites: GEOS 380.</i>	3.0	S2
RHPM 446	Natural Resource Management <i>Prerequisites: RHPM 240, RHPM 300, or faculty permission.</i>	3.0	FA

~~GEOG 342 — Geomorphology ————— 3.0 FA~~

~~Prerequisites: GEOG 101, GEOS 102, PSSC 101, or PSSC 250; GEOG 211, GEOG 219, or AGET 340.~~

~~GEOS 325 — Geology of California ————— 3.0 S2~~

~~Prerequisites: GEOS 101 or GEOS 102 or consent of instructor.~~

Land and Soil Resource Management Electives

9 upper-division units selected from:

To fulfill the requirements of this option, select additional upper-division courses from the major core, or option, or other courses in consultation with your advisor. ~~To fulfill the requirements of this option, select additional upper-division courses from the option core and this area of study in consultation with your advisor.~~

BIOL 334 Conservation Ecology 3.0 FS

Prerequisites: One biological sciences course.

Assessment Matrix for PSSC																			
I = Introduce D = Developed M = Master																			
Student Learning Outcome/Course	Timeline	MATH 105	CHEM 107 or 111	CHEM 108 or 112	ABUS 101	AGET 150	PSSC 101	PSSC 250	ANSC 101 or 230	PSSC 309 or 389	PSSC 356 or 453	AGRI 432 or 441	BIOL 369 or 414 or 448 or 459	ABUS 321 or 341 or 464	AGRI 331	AGRI 482	AGRI 490		
Goal: Demonstrate knowledge of plant and soil science concepts and theories.																			
Demonstrate how plants grow, their forms and functions	AY 19/20						I				D		M		D				
Demonstrate knowledge of soil properties, fertility, and plant mineral nutrition	AY 19/20						I	D			D		M			D			
Demonstrate knowledge of agricultural production systems in	AY 19/20				I	I	I	I	I	D			M			D			
Demonstrate knowledge of nutrient & water cycling, energy flow, and community dynamics in agroecosystems	AY 21/22		I	I				I, D	I			D, M	M			D			
Goal: Demonstrate appropriate analytical methodologies to solve agricultural problems.																			
Knowledge of basic experimental design	AY 20/21							I								D		D, M	
Demonstrate quantitative/analytical skills	AY 20/21	I	I	I	I	I	I	I	I			D			D	D		M	
Demonstrate the scientific method	AY 20/21							I	I							D		D, M	
Goal: Apply knowledge of the complex interrelationships of natural and agricultural systems.																			
Critically evaluate and integrate ecological, social, and economic principles for the management of agricultural systems	AY 21/22							I	I		I	D	D, M			D		D	
Goal: Demonstrate an international and domestic perspective of historical and current issues as applied to agriculture.																			
Demonstrate knowledge of a wide range of agricultural issues and problems (e.g. environmental quality, food safety, and agricultural policy)	AY 22/23							I	I	I	I	D	D, M			D		M	
Identify ethical issues and explore solutions	AY 22/23							I	I			I	D, M			D		M	
Goal: Demonstrate clear and concise communication skills.																			
Demonstrate effective oral communication in Agriculture	AY 22/23							I	I			D	D, M					D, M	M
Demonstrate effective visual/written communication in Agriculture	AY 22/23							I	I	I		D	D, M	D		D, M		D, M	M

Elizabeth "Betsy" A Boyd

From: Elizabeth "Betsy" A Boyd
Sent: Friday, April 27, 2018 3:31 PM
To: Kristopher A Blee; 'Kristina Schierenbeck'; Jonathan R Day; Kristina A Schierenbeck; Christopher Ivey; Colleen A Hatfield
Cc: Stephen Patrick Doyle; John A Unruh; Lee Altier; Elizabeth "Betsy" A Boyd
Subject: RE: PSSC curricular changes
Attachments: Plant & Soil Science catalog copy.pdf

Good afternoon Biology Colleagues,

The College of Agriculture Curriculum Committee approved the PSSC faculty proposal to elevate the option last Friday. I wanted to follow up to let you know that we fixed the typo and added BIOL 451 into the program and have made sure that at least the minimum prerequisite courses needed are also counted in the major (as electives or otherwise).

Additionally, collaboration with other departments led to some other minor changes to other courses we included in the proposed catalog copy. I've attached the final proposed copy for you to peruse if you are interested.

Thank you for your continued partnership and support of our students and of this program!

Have a great weekend!
Betsy

Elizabeth "Betsy" A. Boyd, Ph.D.

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From: Elizabeth "Betsy" A Boyd
Sent: Thursday, April 19, 2018 9:42 PM
To: Christopher Ivey <ctivey@csuchico.edu>; Jonathan R Day <JDay@csuchico.edu>
Cc: Kristopher A Blee <KBlee@csuchico.edu>; Kristina A Schierenbeck <KSchierenbeck@csuchico.edu>; Colleen A Hatfield <chatfield@csuchico.edu>
Subject: RE: PSSC curricular changes

Thank you, Chris! Nice catch on that typo. Much appreciated!

Betsy

From: Christopher Ivey
Sent: Thursday, April 19, 2018 3:51 PM
To: Elizabeth "Betsy" A Boyd <eaboyd@csuchico.edu>; Jonathan R Day <JDay@csuchico.edu>
Cc: Kristopher A Blee <KBlee@csuchico.edu>; Kristina A Schierenbeck <KSchierenbeck@csuchico.edu>; Colleen A Hatfield <chatfield@csuchico.edu>
Subject: RE: PSSC curricular changes

Hi Betsy,

I don't see any concerns. There's a minor typo, however, that carried over from the 'option' copy – Field Ecology is BIOL 484, not BIOL 384.

Cheers,
Chris Ivey

From: Elizabeth "Betsy" A Boyd
Sent: Thursday, April 19, 2018 9:33 PM
To: Kristopher A Blee <KBlee@csuchico.edu>; 'Kristina Schierenbeck' <kschierenbeck@gmail.com>
Cc: Jonathan R Day <JDay@csuchico.edu>; Kristina A Schierenbeck <KSchierenbeck@csuchico.edu>; Christopher Ivey <ctivey@csuchico.edu>; Colleen A Hatfield <chatfield@csuchico.edu>
Subject: RE: PSSC curricular changes

Thank you, Kris, for your support!

Betsy

From: Kristopher A Blee
Sent: Thursday, April 19, 2018 11:21 AM
To: 'Kristina Schierenbeck' <kschierenbeck@gmail.com>; Elizabeth "Betsy" A Boyd <eaboyd@csuchico.edu>
Cc: Jonathan R Day <JDay@csuchico.edu>; Kristina A Schierenbeck <KSchierenbeck@csuchico.edu>; Christopher Ivey <ctivey@csuchico.edu>; Colleen A Hatfield <chatfield@csuchico.edu>
Subject: RE: PSSC curricular changes

I think continued utilization of the bio courses in the new degree plan would be fine. In Biology 151 and Biology 446, College of Agriculture students have performed well.
kris

From: Elizabeth "Betsy" A Boyd
Sent: Wednesday, April 18, 2018 12:36 PM
To: 'Kristina Schierenbeck' <kschierenbeck@gmail.com>
Cc: Jonathan R Day <JDay@csuchico.edu>; Kristopher A Blee <KBlee@csuchico.edu>; Kristina A Schierenbeck <KSchierenbeck@csuchico.edu>; Christopher Ivey <ctivey@csuchico.edu>; Colleen A Hatfield <chatfield@csuchico.edu>
Subject: RE: PSSC curricular changes

Kristina,
Thank you so much for the suggestion! I will bring that idea to the PSSC faculty and discuss adding it.
Betsy

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From: Kristina Schierenbeck [<mailto:kschierenbeck@gmail.com>]

Sent: Wednesday, April 18, 2018 12:14 PM

To: Elizabeth "Betsy" A Boyd

Cc: Jonathan R Day; Kristopher A Blee; Kristina A Schierenbeck; Christopher Ivey; Colleen A Hatfield

Subject: Re: PSSC curricular changes

Dear Betsy,

Thanks for the opportunity to comment on this proposal. It appears to me that this elevation from option to degree is fine. It is clearly agricultural focused in contrast to our Plant Biology degree.

One possible suggestion in the Land Resource option, Biology 451 (Plant Geography) would be a great additional alternative to GEOS 444 (Biogeography..)

Kristina

On Wed, Apr 18, 2018 at 12:06 PM, Elizabeth "Betsy" A Boyd <eaboyd@csuchico.edu> wrote:

Colleagues,

Just a quick follow-up to see if you have any objections to the use of the indicated courses. Also, I wanted to add that we intend to continue offering BIOL 446 as an elective in the major as well.

Please let me know at your earliest convenience. The college curriculum committee will be reviewing the proposal this Friday.

Thank you all!

Betsy

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From: Elizabeth "Betsy" A Boyd
Sent: Monday, April 16, 2018 12:01 PM
To: Jonathan R Day <JDay@csuchico.edu>
Cc: Kristopher A Blee <KBlee@csuchico.edu>; Kristina A Schierenbeck <KSchierenbeck@csuchico.edu>; Christopher Ivey <ctivey@csuchico.edu>; Colleen A Hatfield <chatfield@csuchico.edu>
Subject: RE: PSSC curricular changes

Thanks Jon!

Colleagues, I've attached the files I sent to Jon earlier, so you can see where the specific changes are for our elevation of option proposal. Please let me know if you have any questions.

Warm regards,

Betsy

From: Jonathan R Day
Sent: Monday, April 16, 2018 10:43 AM
To: Elizabeth "Betsy" A Boyd <eaboyd@csuchico.edu>
Cc: Kristopher A Blee <KBlee@csuchico.edu>; Kristina A Schierenbeck <KSchierenbeck@csuchico.edu>; Christopher Ivey <ctivey@csuchico.edu>; Colleen A Hatfield <chatfield@csuchico.edu>; Jonathan R Day <JDay@csuchico.edu>
Subject: RE: PSSC curricular changes

Betsy – I'd like to ask my plant faculty what they think about this change in your program.

Please email your responses to Betsy and copy me. Thanks

Jonathan

Jonathan R. Day, PhD

Professor of Biological Sciences and Chair

College of Natural Sciences,

California State University, Chico

From: Elizabeth "Betsy" A Boyd
Sent: Saturday, April 14, 2018 8:32 PM
To: Jonathan R Day <JDay@csuchico.edu>
Subject: PSSC curricular changes

Hello Jon!

The plant and soil science faculty are completing a proposal that would elevate the existing Option in Crops, Horticulture, and Land Resource Management within the degree of Agriculture to its own stand-alone degree. If approved, the degree would get a shiny new name: Plant and Soil Science.

In terms of specific proposed changes, aside from the elevation, the proposal uses many of the same courses we requested that our students complete in the current option but we have added a couple courses to the proposed major that we have typically used as substitutions.

Courses we already had in the option that will remain in the new degree:

BIOL 414 (core elective course)

BIOL 448 (core elective course)

BIOL 350 (Land Resource option)

Courses we are adding:

BIOL 369 (core elective course)

BIOL 334 (core elective course)

Prerequisites allowed to count in the major:

BIOL 151, 152, 153 (can be used as LD elective courses)

I've attached the proposed catalog copy and side-by-side comparison so you have an idea of how these courses fit into the program.

Many of our students take several BIOL courses in order to complete their degree. Initially, we do not expect a sharp increase in enrolled students (Spring 2018 - 149 majors in the current CHLR option), but as word of mouth and visibility of the program improves, it is likely that we could see the number of majors increase.

Long story short, we don't anticipate additional strain on the courses initially, but that could change with time. What are your thoughts? Would your department support this proposed change? Can I provide you with any additional information or documents that might be helpful?

We are hopeful for a successful outcome with the proposal, of course, but it would not be successful without support from the Biology department. With your permission, I would like to use this email correspondence in our proposal.

Thank you,

Betsy

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Elizabeth "Betsy" A Boyd

From: Dean H Fairbanks
Sent: Friday, April 27, 2018 4:51 PM
To: Elizabeth "Betsy" A Boyd
Cc: Stephen Patrick Doyle; John A Unruh; Lee Altier
Subject: Re: Proposed PSSC elevation option

Hi Betsy,

Well done! I will read over the new document. We are looking forward to working with Ag on both our degrees.

Cheers
Dean

Dean Fairbanks
Professor and Dept. Head
Dept. of Geography and Planning
California State University, Chico
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USA

+1 530 898-5780 Tel.

From: Elizabeth "Betsy" A Boyd
Sent: Friday, April 27, 2018 3:30:32 PM
To: Dean H Fairbanks
Cc: Stephen Patrick Doyle; John A Unruh; Lee Altier; Elizabeth "Betsy" A Boyd
Subject: RE: Proposed PSSC elevation option

Good afternoon Dean,

The College of Agriculture Curriculum Committee approved the PSSC faculty proposal to elevate the option last Friday. I wanted to follow up to let you know that we double checked all the prerequisites for all GEOG courses listed in the program and have made sure that at least the minimum prerequisite courses needed are also counted in the major (as electives or otherwise). Thank you for mentioning those.

Additionally, collaboration with other departments led to some minor changes to other courses we included in the proposed catalog copy. I've attached the final proposed copy for you to peruse if you are interested.

Congratulations again on the news from the CO regarding the BS in Geography. I look forward to conversations and partnerships in support of our respective programs. Please let me know if we can assist in other ways!

Have a great weekend!
Betsy

Elizabeth "Betsy" A. Boyd, Ph.D.

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From: Elizabeth "Betsy" A Boyd
Sent: Thursday, April 19, 2018 9:45 PM
To: Dean H Fairbanks <dhfairbanks@csuchico.edu>
Subject: RE: Proposed AG degree document

Hi Dean,

Thanks so much! I know you have quite a lot on your plate right now, so any comments or thoughts are very much appreciated.

So noted on the pre-reqs and we look forward to supporting your program!

Betsy

From: Dean H Fairbanks
Sent: Thursday, April 19, 2018 3:09 PM
To: Elizabeth "Betsy" A Boyd <eaboyd@csuchico.edu>
Subject: RE: Proposed AG degree document

Hi Betsy,

No issue with including those courses, but watch the prereqs on 342, 444, 427, 445.

I will have more back to you tomorrow as far as the language. We also received back from the CO the okay to develop our new BS Geography. We will be using the soil courses from Ag. Going to EPPC in Fall.

Cheers
Dean

Dean H.K. Fairbanks
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From: Elizabeth "Betsy" A Boyd
Sent: Wednesday, April 18, 2018 12:32 PM
To: Dean H Fairbanks <dhfairbanks@csuchico.edu>
Subject: RE: Proposed AG degree document
Importance: High

Good afternoon Dean,

Just a quick follow-up to see if there are any comments or suggestions to the proposed PSSC degree. Particularly, we are hoping there are no objections to the proposed inclusion of GEOG 211, 320, 342, 444, 427, 445 courses as electives in the Land Resource option. I've attached the catalog copy again (slightly updated) and a side-by-side comparison with the old program so you can view the courses we currently have listed in the option.

Please let me know at your earliest convenience. The College of Ag curriculum committee will be reviewing the proposal this Friday.

Thank you!
Betsy

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From: Elizabeth "Betsy" A Boyd
Sent: Saturday, April 14, 2018 8:11 PM
To: Dean H Fairbanks <dhfairbanks@csuchico.edu>; Garrett C Liles <gcliles@csuchico.edu>
Subject: RE: Proposed AG degree document

Hello Dean,

Thank you very much for meeting with us as well and for your patience in waiting for our proposed catalog copy. It took us a bit more time to refine our it than I anticipated. I've attached it here. Please let me know if you have any questions or comments or concerns. We are submitting our proposal for curricular review soon and expect the college curriculum committee to vote on our proposal next Friday, April 20th.

As always, we appreciate the partnership we have with Geography. I think each of our programs serve distinctive niches.

Thank you!

Betsy

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From: Dean H Fairbanks
Sent: Thursday, March 1, 2018 10:29 AM
To: Garrett C Liles <gcliles@csuchico.edu>; Elizabeth "Betsy" A Boyd <eaboyle@csuchico.edu>
Subject: Proposed AG degree document

Hi Garrett and Betsy,

Thank you for the meeting last week. Always happy for the collaboration across colleges it is what makes the university stronger and provides better delivery of content to our students.

Please send me the draft of your document to read through and comment.

Cheers
Dean

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Elizabeth "Betsy" A Boyd

From: Russell S Shapiro
Sent: Monday, April 30, 2018 8:21 AM
To: Elizabeth "Betsy" A Boyd
Subject: Re: PSSC Curricular Changes

Glad to help, good luck!

Russell

Russell S. Shapiro, Ph.D.
Professor and Chair
Department of Geological and Environmental Sciences
CSU, Chico
Chico, CA 95929-0205

530.898.4300

rsshapiro.weebly.com

On Apr 27, 2018, at 3:32 PM, Elizabeth Betsy A Boyd <eaboyd@csuchico.edu> wrote:

Good afternoon Russell,

The College of Agriculture Curriculum Committee approved the PSSC faculty proposal to elevate the option last Friday. I wanted to follow up to let you know that we incorporated many of the (super helpful!) suggestions you provided into the program, and have made sure that at least the minimum prerequisite courses needed are also counted in the major (as electives or otherwise).

Based on the suggestions, we decided on the following actions for the courses mentioned:

GEOS 325 – retained

GEOS 315 – retained, moved to Resources section of LSRM option

GEOS 330 – removed

GEOS 380 – retained, but will monitor how many students enroll in this course

GEOS 410 – removed

GEOS 4XX – removed, but we will keep checking in hopes that it will become a future elective

GEOS 307 – not added due to concerns over prerequisites and alignment with the LSRM curriculum

GEOS 265 – added to LD electives

GEOS 460 – added to Management section of LSRM option

Additionally, collaboration with other departments led to some other minor changes to other courses we included in the proposed catalog copy. I've attached the final proposed copy for you to peruse if you are interested.

Thank you for your continued partnership and support of our students and of this program!

Have a great weekend!

Betsy

Elizabeth "Betsy" A. Boyd, Ph.D.

Associate Professor – Plant Science

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From: Elizabeth "Betsy" A Boyd
Sent: Wednesday, April 18, 2018 10:04 PM
To: Russell S Shapiro <rsshapiro@csuchico.edu>
Subject: Re: PSSC Curricular Changes

Russell,

This is extremely helpful. Thank you so much!

I will share these with the PSSC faculty and consider the additions you suggest.

Warm regards,
Betsy

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----- Original message -----

From: Russell S Shapiro <rsshapiro@csuchico.edu>
Date: 4/18/18 2:32 PM (GMT-08:00)
To: Elizabeth Betsy A Boyd <eaboyd@csuchico.edu>
Subject: Re: PSSC Curricular Changes

See Comments below.

Russell

Russell S. Shapiro, Ph.D.
Professor and Chair
Department of Geological and Environmental Sciences
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GEOS 325 (elective in proposed Land Resource option).

Good choice as broad, sophomore level class on the general geology of the state.

Courses we would like to add as electives in the Land Resource option:
GEOS 315 (option elective course)

Good environmental chemistry course.

GEOS 330 (option elective course)

Not a grand choice as this is targeted as an upper division GE for non-science folks. It is essentially the same course as GEOS 130. But, ok if you want to keep.

GEOS 380 (option elective course)

Sure, but has anyone taken this class? Hydrology seems a bit specialized.

GEOS 410 (option elective course)

Good, but again, specialized to Watershed Hydrology

GEOS 4XX (option elective course; not sure of course number as it wasn't in the catalog, but thinking title was Wetland & Riparian Ecology?)

Still fighting to get this on the books. Not there yet.

I would recommend GEOS 307-Stratigraphy as that is the sophomore level class in sediments and would go well with folks thinking about the science of soils. (Our soil class is GEOS 265 but I would assume your students would take that through Ag). Another potential useful course would be GEOS 460 Water Resource Management.

Russell

<Plant & Soil Science catalog copy.pdf>

Elizabeth "Betsy" A Boyd

From: Elizabeth "Betsy" A Boyd
Sent: Friday, April 27, 2018 3:32 PM
To: Emilyn Sheffield
Cc: Stephen Patrick Doyle; John A Unruh; Lee Altier; Elizabeth "Betsy" A Boyd
Subject: RE: PSSC Curricular Changes
Attachments: Plant & Soil Science catalog copy.pdf

Good afternoon Emilyn,

The College of Agriculture Curriculum Committee approved the PSSC faculty proposal to elevate the option last Friday. I wanted to follow up to let you know that we added RHPM 240 into the program since it is listed as a prerequisite. One focal point for our program was to ensure that at least the minimum prerequisite courses needed for any course are also counted in the major (as electives or otherwise).

We also considered adding RHPM 441 to the program, and feel it would be a little bit of a stretch for the current curriculum focus. However, while we did not specifically list it, we are happy to allow it as a possible UD elective for any student that believes it might be needed for their future endeavors. Faculty were thankful that you mentioned it because it will help us advise students that might be looking for such a course in the future. We also thought that Geography might have interest in this course, and wanted to suggest chatting with faculty in that department since they are working toward a new degree in Geography where it might be a good fit.

Additionally, collaboration with other departments led to some other minor changes to other courses we included in the proposed catalog copy. I've attached the final proposed copy for you to peruse if you are interested.

Thank you for your continued partnership and support of our students and of this program!

Have a great weekend!
Betsy

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From: Elizabeth "Betsy" A Boyd
Sent: Wednesday, April 18, 2018 9:55 PM
To: Emilyn Sheffield <ESheffield@csuchico.edu>
Subject: Re: PSSC Curricular Changes

Thank you Emilyn!

Really appreciate the suggestions. I will bring those to the PSSC faculty for consideration. And yes, let's meet! I believe we have some synergistic opportunities!

Warm regards,
Betsy

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----- Original message -----

From: Emilyn Sheffield <ESheffield@csuchico.edu>

Date: 4/18/18 1:47 PM (GMT-08:00)

To: Elizabeth Betsy A Boyd <eaboyd@csuchico.edu>

Subject: Re: PSSC Curricular Changes

Hi, Betsy:

My apology. We have no objection whatsoever to listing RHPM 446 as an elective for proposed PSSC degree program. RHPM 240 and RHPM 441 might also be useful for students pursuing certain career paths.

Let's find some time to chat soon (summer maybe?) about how we might better support each other's programs.

Best, Emilyn

From: Elizabeth "Betsy" A Boyd

Sent: Wednesday, April 18, 2018 12:23 PM

To: Emilyn Sheffield

Subject: RE: PSSC Curricular Changes

Hello Emilyn,

Just a quick follow-up to see if there are any objections to listing RHPM 446 as an elective in the proposed PSSC degree.

Please let me know at your earliest convenience. The College of Ag curriculum committee will be reviewing the proposal this Friday.

Thank you!

Betsy

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From: Elizabeth "Betsy" A Boyd

Sent: Saturday, April 14, 2018 9:10 PM

To: Emilyn Sheffield <ESheffield@csuchico.edu>

Subject: PSSC Curricular Changes

Hello Emilyn!

The plant and soil science faculty are completing a proposal that would elevate the existing Option in Crops, Horticulture, and Land Resource Management within the degree of Agriculture to its own stand-alone degree. If approved, the degree would get a shiny new name: Plant and Soil Science.

In terms of specific proposed changes, aside from the elevation, the proposal uses many of the same courses we used as electives in the Land Resource area of study but we would like to add RHPM 446 as an elective in the Land Resource option. We would also like to add one of the prerequisite course choices RHPM 240 as a possible lower division elective.

I've attached the proposed catalog copy and side-by-side comparison so you have an idea of how these courses fit into the program.

Initially, we do not expect a sharp increase in enrolled students (Spring 2018 - 149 majors in the current CHLR option, we estimate about 0.25 to 0.33 of those are Land Resource focused), but as word of mouth and visibility of the program improves, it is likely that we could see the number of majors increase.

Long story short, we don't anticipate a large demand on the courses initially because we would like to include them as electives, but that could change with time. What are your thoughts? Would your department support this proposed change? Can I provide you with any additional information or documents that might be helpful?

We are hopeful for a successful outcome with the proposal, of course, but it would not be successful without support from the Recreation, Hospitality and Parks Management department. With your permission, I would like to use this email correspondence in our proposal.

Thank you,

Betsy

Elizabeth "Betsy" A. Boyd, Ph.D.

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Discontinue Undergraduate Program: See [EM 15-005](#)

Program Name: Option in Crops, Horticulture, and Land Resource Management

Complete only if applicable:

Program named above is:

Option within Agriculture
(Degree program name)

Option is being elevated to a degree (see elevation proposal for rationale).

Minor

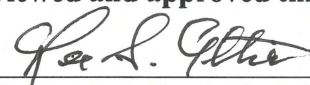
Certificate

Rationale:

Please see the proposal to elevate the Crops, Horticulture, and Land Resource Management option within the B.S. in Agriculture to a stand-alone B.S. in Plant and Soil Science for extensive rationale. If the option elevation proposal is approved, then this discontinuation would be processed.


Required Signatures

The Department of N/A
has reviewed and approved this program discontinuation.

 4/20/18
Chair, Department Curriculum Committee Date

 4/20/18
Department Chair Date

The College of Agriculture
has reviewed and approved this program discontinuation.

 4/20/18
Chair, College Curriculum Committee Date

 5/8/18
College Dean Date

Send signature page with proposal attached to Curriculum Services at Undergraduate Education, zip 128